

A REPORT ON THE RESULTS OF THE TISZA-RESEARCH WORK IN 1980

GY. CSIZMAZIA

(Received September 22, 1981)

The present-day scene of our 12th Conference may perhaps be unaccustomed to those who were already accustomed to that, in the Aprils of the past eleven years, our scientific lectures were delivered in the Assembly Hall of the Clubhouse of the Academy Committee in Szeged. I think that — on the 12th occasion — we find also here familiar surroundings for our conference and, apart from this even, symbolically considerable site, we shall really experience, at present and in the future, as well, the realization of the thematic and intellectual connection between water conservancy and Tisza-research work.

The Tisza-Research Working Committee was always active — since it was organized by Academician GÁBOR KOLOSVÁRY in 1957 — and in 1980, its 23rd year, as well, within the framework of the subject, confirmed by the Hungarian Academy of Sciences and entitled: “complex investigation into the river Tisza and its flood-plain, taking into consideration the river barrages and nature conservatory districts”, connected with the long-range theme of the Hungarian Academy of Sciences for 15 years, entitled: “Protection of the man and his natural environment”. tély nature reserve (island Körtvélyes). Our co-workers made, of course, samplings and investigations in the Upper Tisza and in other Tisza reaches, as well. Let us survey, in short, the results of the single fields of work on the basis of reports received. It is to be noted that there were one or two co-workers omitting to send in end-of-year reports.

The most important task of water-chemists was to evaluate the full investigation into the sediment-samples from the longitudinal sections and to prepare these for being published. They followed with attention the formation of the water quality of the Kisköre reservoir, after the rinsing canals being opened.

Apart from continuing the bacteriological research into the Tisza, the investigation also covered a few minor affluents (Zagyva, Eger, the brooklet Laskó, the watershed area of the Gerje). It is a monitory result of the investigation that the Tisza shows at Csongrád a 3rd degree pollution, on the basis of bacteriological research works.

The algological water samples are under being elaborated from the reaches of Tisza III. It is indicated by the algological investigations into the brooks Eger and Laskó that the taxons that are characteristic of the waters of such types are

strongly selected after the area of the source and the organisms indicating pollutions came into prominence. The presence of 130 algal species was demonstrated by the research work continued for ten years in the Eastern Main Channel — and during the same period, the eutrophication of the Main Channel decreased by 30—35 p.c. By the sewage-filtering systems of the Tisza chemical combine a waste water of more favourable quality was admitted into the Tisza in 1980.

The zooplankton investigations included taxonomical-ecological research into the zooplankton to be found in the back-waters between Tiszazug and Szeged. The Benthos-investigation evaluated the sediment samples of the previous longitudinal section of the Tisza, classifying them into oligochaetous and polychaetous-groups. In the samples collected in the Kisköre reservoir, larvae of chironomidae live in an anaerobic, muddy organic sediment in a decreasing number. In the hair-weed vegetation, the species *ortokladinae* which play the part of essential fish foods, multiply.

A group of botanists from Nyíregyháza thoroughly prepared the phytocoenological investigations in their test-area, chosen at Upper Tiszavidék. The microbiological research-work began, in order to recognize reducent organisms, living in the water of the Tisza and reducing hydrate of carbon to its components.

From among the botanical investigations, it is to be emphasized that the aquatic species *Alisma plantago* is suitable for indicating copper pollution.

From among the zoological investigations, the following are to be mentioned: The ecofaunistic investigations into wild bee populations, continued in the district of the Kisköre reservoir for five years, are terminated. The research into the long-horned beetles (*Cerambycidae* family) is similarly summarized. The first simulation models about the ant populations of various ecological situations and their regeneration are made. Their proving was postponed to this year owing to the high flood in 1980. The collections of the orders *Orthoptera*, *Neuroptera*, *Odonata*, *Ephemeroptera*, *Trichoptera* of the Alpár basin. The collection and elaboration of the *Diptera* stock of the island Körtvélyes made considerable progress, as well, last year. The elaboration of the mollusc material, collected in all the Hungarian reaches of the Tisza, took place. The ichthyological work was directed to the spawning of fish and to the problem of returning the brood back to the river. An interesting fact is the fishing out of sturgeon at Tiszafüred.

The group of ornithologists investigated into the productive biological role of the avifauna in the basin at Alpár. In the Middle- and Lower-Tisza Regions the bird-stock-takings and the sonographic analysis of their singing and that of the ethology of certain taxons continued. In 1980, the ekofaunistic evaluation and published. A histological research work was continued into certain species of the order of *ordinata* and the haematocytes of fish in the Tisza.

The number of the co-workers of the Tisza-Research Working Committee was 49 at the end of the year 1980. Foreign co-workers are not included in this number. After acting as secretary for 12 years, MIKLÓS MARIÁN resigned his secretarial post. Instead of him, I have got commission to perform these duties. Here in this Conference, as well, we should like to record our gratitude to MIKLÓS MARIÁN for his activity with which he served the object of Tisza Research in the interest of our common work.

Last year deceased ZOLTÁN JÓSA, reader of the Teachers' Training College in Szeged. With his protistological research work he assisted the programme of Tisza research work with success, in the series of long years. Our co-worker was qualified for a candidate's degree, JÚLIA SZÉLL obtained the degree of doctor in the University. More than one of our co-workers are immediately before obtaining these. The occu-

pational distribution of the Research Working Committee is as follows: natural geometry 1, water chemistry 2, hydrobiology 13, botany 8, zoology 23 co-workers. There have more accessions to our Working Committee. Thus colleagues SÁNDOR BAGDI, ATTILA ZSIGA, ISTVÁN SZEKERES, TÍCOR KERESZTES, SÁNDOR KOVÁCS, and ZSIGMOND RÉTHY became members. In the recent months, the requests for admission of more other researchers arrived, as well, about which the following session of the Working Committee will decide.

During the year, 1980, 50 papers were written by our co-workers on subjects of Tisza research work. The papers (published 26, in the press 24) were written for the volumes of the *Tiscia, Vízdok*, (Water Doc.), *Acta Debrecina*; *Acta biologica*, Szeged; *Főiskola Tudományos Közleményei* (Scientific Publications of the Teachers' Training College, Szeged), *Annals of the Ferenc Móra Museum*, *Avifauna of the Southern Great Hungarian Plain*, *Haliotis and the Hortobágy*. There were, also, a few popularizing papers published (*Halászat* — Fishing), *Délmagyarország* — Southern Hungary).

Our 23 co-workers delivered 46 lessons on subjects of Tisza research work, in different towns in Hungary and abroad.

These were delivered in the following programmes:

Tisza Research Conference, Szeged; VITUKI, Budapest; County Council, Eger; Meeting of Hydrobiologists, Hajdúszoboszló; "METESZ", Szeged; Hydrobiological Days, Tihany; Kisköre Laboratory, Kisköre; Month of the Museum, Szeged; Meeting of snail researchers, Barcs; Teachers' Training College, Nyíregyháza; Itinerary Congress of the Hungarian Biological Society, Kecskemét; *Ecologica*; Institute of the Polish Scientific Academy, Warsaw; XIIth Malacological Congress, Perpignan.

The library of the Tisza-Research Working Committee highly increased in 1980, as well, by means of the material received in exchange for the *Journal Tiscia*. It already grew out of its storage place in the small room of the Botanical Gardens. It takes place among the plans of the future, to solve, organize lending out of this important special material for our co-workers.

It is to be said in outlines of the tasks of the present year and of the future ones that our research work should be centralized to the area to be Tisza III and the Tisza II reservoir. The omitted investigations at Körtvélyes and their synthesis should possibly be performed this year.

In the Upper-Tisza, the Research Working Committee of Nyíregyháza perform their work together with those from Ungvár and, similarly, in the southern reaches, the research work is carried out under the guidance of the Departments of the University in Novi Sad (Újvidék).

According to the customs, consolidated so far, the base buildings are at the disposal of our members after stock-taking. We have hopes, as well, of getting to use the research house at the skirts of the bird reserve at Pály. From among the boats, this year the small "sand martin" is in work in hand of Miklós Marián.

We ask our co-workers to present the inventorized tools and instruments in their use in the month of May, on the days indicated in the letter. After signing the acknowledgments of receipt, these remain, of course, in the use of the co-workers, in the service of the research work.

The Rules of Organization of the Tisza-Research Working Company are ready. The dean of the Faculty of Science of the Attila József University has entrusted the president-in-service of the Biological Committee with supervising it. The Hun-

garian Academy of Sciences and the Centre of Water Supply Management continue moral and material assistance, in the following years, as well.

The Ministry of Education — after a working-place discussion, directed by Comrade Páris — approved of the Tisza-Research work in 1980 and both the Ministry and the opponenets spoke recognizingly about the research work, of the members of the Research-Working Committee-

The Ministry of Education inviting competition, the Tisza-Research Working Committee entered the competition for a grant on the basis of the concrete research programme. The Ministry decides on the competition and will send a message of it in August. It is to be noted that a very high number of participants take part in the competition. Nevertheless, we have some hope of winning it and, in this case, the financial sources will open in September. Till then, we should work under very difficult material conditions.

This month, the meeting of the Zoological Committee was in Szeged, in the Department of Professor MÓCZÁR, where Professor TIGYI, president of the Biological Division of the Hungarian Academy of Sciences and Academician ZOLTÁN KASZAB, President of the Section, confirmed the general research direction of the Tisza-Research Working Committee and both the Academy and the Zoological Committee assured our work of their assistance.

We should like to call the attention to a factor, which is very important from the point of view of the future: universities, colleges, laboratories, ought to try taking care of educating the young rising generation, dealing with Tisza-research work, as well, in order that the gaps, manifesting themselves in certain working scopes and taxons, should not mean any problem in the following years.

After this short information, restricted to the most important facts, I feel my duty to acknowledge with thanks the great assistance of the competent members of the Water Conservancy of the Lower-Tisza Region, in preading the invitation card of the Conference and placing the big hall at our disposal. Many thanks for these.

I ask my dear co-workers, every member of the Tisza-Research Working Committee, to turn to our Committee, during their works of this year and the coming ones, with their requests, problems, plans. We have to continue according to our common notions these main research works, characterizing our research working group. We should endeavour that our existing subjects should not become ossified, certain traditions in the bad sense. The promoter of the research work should not be self-preservation but the connection with real claims, the solution of the tasks given by the inner development of science. I am convinced that with the enthusiastic hard work, being in the past, too, devoted to duty, unselfish and willing to make sacrifices, we shall succeed in uncovering still more exactly the life, living world of our everlastingly beautiful, continuously changing, dear old river, the Tisza.

Árhullámok hatása a Körtvélyesi árterület vakondok (*Talpa europaea* Linné, 1758) populációjára

CSIZMADIA Gy.

Juhász Gyula Tanárképző Főiskola Biológia Tanszék
Szeged, Magyarország

A szerző 1970—74. évek között a Körtvélyesi árterületen vizsgálta a *Talpa europaea* viselkedési szokásait árhullámok alkalmával. STERBETZ (1975) feltételezése és közlése szerint, e faj árvizek esetén a vízzel borított árterületen mélyebbre ássa magát és ott átvészeli az árhullámot. A Körtvélyesi területen végzett szelvényfeltáró (gát), csapdázó és megfigyelési adatok összevetése után ez kizártnak tekintendő. A Talpák az árvizek alkalmával felszínre jönnek és így próbálnak —sokszor úszva— menekülni. Egy részüknek sikerül, ezek a védőoltáson húzódnak meg. A Talpák regenerációja az árhullám visszahúzódása után gyorsan történik, (hidrofil faj) de az árterület ökológiai adottságai ezt nagyban befolyásolják (holtmeder megkerülése). Más talajszerkezettel rendelkező árterületen (mint pl. a szembenlevő jobb part), esetleg nem kizárt STERBETZ feltételezése, de a feltáró vizsgálatok végzése ott is elengedhetetlenül szükséges.

Uticaj poplava na populaciju krtice (*Talpa europaea* L., 1758) na plavnom podru ju Körtvélyes

CSIZMADIA Gy.

VPŠ "Juhász", Gyula Katedra za biologiju, Szeged, Hungária

Abstrakt

Autor je proučavanje ponašanja krtice na plavnom području Körtvélyes prilikom poplava vršio u periodu 1970—74. godine. STERBETZ (1975) pretpostavlja da se krtice na poplavljenom području duble ukopaju i na taj način prežive poplavu. Na osnovu naših posmatranja i ispitivanja nasipa i ulova i upoređivanja dobijenih podataka sa područja Körtvélyes, je ova pretpostavka isključena. Krtice prilikom poplave izlaze na površinu — i često plivajući — se spašavaju. Neki se od njih zadržavaju odbrandbenim nasipima.

Regeneracija krtica se nakom povlačenja vode brzo uspostavlja (hidrofilna vrsta). Proces regeneracije je u velikoj meri ovisna od ekoloških osobenosti samog terena (uaobilaženje mrtvaja). Na plavnom područjima sa drugačijim strukturalnim odlikama tla (kao što je slučaj sa naspramnom desnom obalom) modža nije isključena pretpostavka STERBETZ-a, mada su u tom pravcu neophodna detaljnija istraživanja.

ВЛИЯНИЕ НАВОДНЕНИЙ НА ПОПУЛЯЦИИ КРОТА В ЗАЛИВНОЙ ТЕРРИТОРИИ КӨРТВЕЙЕШ

Д. Чизмазиа

Кафедра биологии. Пединститут им. Дюла Юхас, Сегед

Резюме

Автор с 1970 по 1974 год знакомился с поведением крота во время наводнения на заливной территории Көртвейеш. По данным Штерберта (1975 г.), во время наводнения, крот глубже зарывается в почву и там переживает наводнение. По проведенным нам исследованиям, это явление исключается на территории Көртвейеш. Здесь во время наводнения кроты выходили на поверхность почвы и уплывали спасая свою жизнь. Отчасти даже оставались на защитных дамбах. После наводнения рек регенерация кротов проходит очень быстро (гидрофильный вид), несмотря на то, что существующие экологические условия заливных территорий сильно затрудняют этот процесс. Может быть данные Штерберта являются верными иной структуре почвы (на другом берегу реки), однако, в таком случае следует провести разведочные исследования.